

Appl. No. 10/825,016
Amendment dated June 16, 2006
Reply to Office Action of March 17, 2006

REMARKS

I. Claim rejection under 35 U.S.C. §112

Applicant appreciated and acknowledges the Examiner's remarks concerning the lack of antecedent basis for the term "the chevron shape" in Claim 5, due to a typographical error. Claim 5 has been amended herein to bring the claim into compliance with 35 U.S.C. § 112, second paragraph.

Claim 13 has also been amended to resolve a typographical error, not cited by the Examiner, which could give rise to an issue of indefiniteness if not corrected.

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II. Claim rejection under 35 U.S.C. § 102(b)

It is well established that anticipation requires that each and every element of the applicant's claimed invention must be disclosed in a single prior-art reference. In re Paulson, 30 F.3d 1475, 31 U.S.P.Q.2d (BNA) 1671 (Fed. Cir. 1994); In re Spada, 911 F.2d 705, 15 U.S.P.Q.2d (BNA) 1655 (Fed. Cir. 1990). It follows that absence from the reference of any claimed element negates anticipation. Koster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 230 U.S.P.Q.2d (BNA) 81 (Fed. Cir. 1986). Anticipation will only arise where the description of the invention, as defined by appropriately construed claims, is identically shown in as complete detail as is contained in the applicant's patent claim. Glaverbel S.A. v. Northlake Mkt'g & Supp., Inc. 45 F.3d 1550, 33 U.S.P.Q.2d (BNA) 1496 (Fed. Cir. 1995); Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 U.S.P.Q.2d (BNA) 1913 (Fed. Cir. 1989).

A. 35 U.S.C. §102(b) Rejection of Claims 1, 7, 12, 13, 22-24, 26, 28, 34, 37, and 39 as Being Anticipated by Brown

The Office Action rejects claims 1, 7, 12, 13, 22-24, 26, 28, 34, 37, and 39 as being anticipated by Brown. Applicant respectfully traverses this rejection. Applicant accordingly notes the following elements taught by the instant invention that are not taught in the Brown patent, as the Office Action states, inter alia, the following relevant points in regard to Brown:

1. Regarding Claim 1, the Office Action asserts that the Brown reference "discloses... the first seal separating the first and second compartments (via additional

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separations comprising the chamber and the second seal, see Fig. 2), the second seal separating the second compartment and the chamber..."

This is not the construction of the Brown device. In Brown, a first seal 26, or a plurality of first seals 26, separates one or more compartments 27 from both (a) each other and (b) from the chamber 28. (See Fig. 1a, 1b, 2). The rupturing of the first seal 26 immediately places the contents of any particular compartment 27 in direct fluid communication with the chamber 28. (See Fig. 2) This is in contradistinction to the instant invention, wherein a rupture of the first frangible seal 210A, 220A, places the first compartment 130B in fluid communication only with the second compartment 130A, and does not allow fluid communication between the second compartment 130A and the chamber 170. (See Figs. 2B, B, 4B, 3C, 5B, and 6). The egress of fluid into the chamber 170 can only be accomplished by a rupturing of the second frangible seal, e.g., 210, 220 (See Figs. 3B, 4B, 3C, 5B, and 6).

If an attempt is made to consider one seal 26 (e.g., the "left hand compartment seal" as seen in Figs. 1-2, 4) of Brown as the "first seal" and another seal 26 as the "second seal" (e.g., the "right hand compartment seal" as seen in Figs. 1-2, 4), it becomes apparent that the putative "first seal" therefore separates the first compartment 27 and the chamber 28, and does not meet the limitation of the instant invention, wherein "the first frangible seal separates said first and second compartments and said second frangible seal separates said second compartment and said chamber." (See Claim 1).

As claims 7 and 12 are dependent claims that depend from Claim 1, the differentiation of Claim 1 from the device of Brown renders any semblance between the structures claimed and those of Brown moot.

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Notwithstanding the above arguments, Claim 1 has been herein amended to more clearly recite the cooperation between the first 130B and second compartments 130A, the first 210A and second frangible seals 210, and the chamber 170 of the instant invention. (See inter alia, Fig. 2B)

2. Regarding Claim 13, the Office Action asserts that the Brown reference “discloses...a chamber (28 and 12a) bounded by the sheet section, applicator, bond, and seals (see Fig. 2)...” [Emphasis on plural supplied]

The language of Claim 13 of the instant invention specifies that the chamber is “bounded in part by the applicator, the applicator bond, and one [emphasis on singular supplied] frangible seal.”

The construction of Brown makes clear that the “chamber,” 28 such as it may be construed, cannot be bounded by one frangible seal 26 in a multi-compartment device. Without a boundary formed in part by all of the seals 26, the chamber 28 would be in fluid communication with any compartment 27 which was not separated by such a seal.

As claim 22 is a dependent claims that depends from Claim 13, the differentiation of Claim 13 from the device of Brown renders any semblance between the structures claimed and those of Brown moot.

3. Regarding Claim 23, the Office Action asserts that the Brown reference “discloses...the first seal located at a common edge between the first compartment and the chamber...the second seal located at an intermediate edge between the first compartment

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and second compartment (note that the chamber is also between the second seal and one of the compartments)....”

In the Brown device, as detailed above, there is no “first seal” and “second seal” having discrete functions, as detailed in the instant invention. Rupture of either seal 26 of the Brown device will immediately put the contents of the compartment 27 in fluid communication with the chamber 28, but there will be no mixing of contents between the compartments 27 of Brown unless both seals 26 are ruptured. Thus, it is improper to characterize either seal 26 of Brown as being “between the first compartment and second compartment” or a being “between the first compartment and the chamber.”

4. Regarding Claim 23, the Office Action asserts that the Brown reference “discloses...[a seal] designed to break at a second predetermined pressure equal to the first pressure....” [Emphasis supplied]

The actual language of the instant invention requires that the second predetermined pressure, resulting in breakage of the second seal 220A, 230A (See. e.g. Figs. 4b and 5b) be “less than or equal to the first predetermined pressure.” This is in complete contradistinction to the device of Brown, in which there is no required pressure relationship between the breaking pressures of the seals 26. Either of the seals 26 of Brown may have higher, or lower, rupturing pressures, than any of the other frangible seals 26 in the device, a palpable difference from the limitation of the instant invention, in which the first predetermined pressure shall be “less than or equal to the second predetermined pressure.” (See instant invention at Claim 23).

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As claims 24, 26, 28, 34, 37, and 39 are dependent claims that depend from Claim 23; the differentiation of Claim 23 from the device of Brown renders any semblance between the structures claimed and those of Brown moot.

Notwithstanding the above arguments, Claim 23 has been herein amended to more clearly recite the cooperation between the first 130B and second compartments 130A, the first 210A and second frangible seals 210, and the chamber 170 of the instant invention. (See inter alia, Fig. 2B)

III. Claim Rejections Under 35 U.S.C. § 103

A. 35 U.S.C. §103(a) Rejection of Claims 10, 20, and 38 Being Unpatentable over Brown

Examiner rejects claims 10, 20, and 38 as being unpatentable over Brown. As detailed above, Brown fails to teach a great many of the claimed features of the instant invention, making reliance upon Brown inapt under 35 U.S.C. § 103(a). In particular, the Office Action states that while Brown "remains silent as to the surface area of the bond area compared to the surface of the applicator...it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum workable ranges involves only routine skill in the art."

One of the many features of the instant invention not taught by Brown is the existence of an expansive chamber 170, formed particularly for the purpose of diffusing the hydraulic shock pressure generated immediately following the rupture of the second frangible seal, e.g. 220, separating the second compartment from the chamber (see, e.g. 130A, Fig. 3C). The instant application teaches:

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Accordingly, an optimal design should provide for an easy means of fabricating packages with varying sized expandable areas. The instant invention accomplishes this by its utilization of a chamber 170, and an applicator bond area 180 and applicator 100, and in particular, expandability is imparted to the chamber by the expansion of the chamber 170 walls and by the resilient nature of the applicator 100. This resilient nature allows the contents of the chamber 170 to expand under pressure, thereby absorbing the hydraulic shock as the dispensed substance breaks through the frangible seal 210 and enters the chamber 170. The dispensed substance then tends to remain behind the applicator 100 and can be easily dispensed and spread when the applicator 100 is pressed against a surface.

The volume of the chamber 170 may be varied by varying the relative size of the at least one applicator bond area 180 and the applicator 100. In a preferred embodiment, the surface area of the bond area 180 is between approximately 62.5% of the surface area of the applicator 100 and approximately 87.5% of the surface area of the applicator 100. As the ratio of the area of the applicator bond area 180 to the area of the applicator 100, expressed as a percentage, increases towards 100%, the expandability of the chamber 170 decreases and the high pressure and velocity effects noted above would become more prominent. As the ratio of the area of the applicator bond area 180 to the area of the applicator 100, expressed as a percentage, decreases towards zero, a point which it cannot reach due to the necessary resulting failure of the bond, the expandability of the chamber 170 increases and the low pressure effects noted above would become more prominent. Numerous embodiments are possible, as would be apparent to one skilled in the art, varying this applicator bond area 180 to applicator 100 area relationship, and might be selected to reflect particular characteristics of the substance to be dispensed, including by way of example and not limitation, viscosity of the dispensed substance.

Thus, a key teaching of the instant invention, utterly absent from Brown, which does not have an expansible chamber, is that the volume of the expansible chamber, and therefore the hydraulic performance of the invention, is directly affected by the bond to applicator size ratio. Therefore, this is not a case where "the general conditions of a claim are disclosed" by the prior art.

B. 35 U.S.C. §103(a) Rejection of Claims 3-6, 9, 14, 16-19, 27, 30-33, and 36 as Being Unpatentable over Brown in View of Gruenbacher

1. Regarding Claims 3, 4, 6, 16-18, 30, 31, and 33, The Office Action asserts "the Gruenbacher reference teaches a similar apparatus having frangible seals with a

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chevron shaped stress riser with a sharp inflection point oriented toward to compartment....It would have been obvious to employ chevron shaped stress risers with sharp inflection points oriented toward the compartments on the frangible seals of the Brown apparatus...."

While Gruenbacher does disclose certain variations of stress concentrators, it does not disclose sinusoidal shapes. Additionally, claims 2, 15, and 29 are directed to a frangible seal having at least one sinusoidal shape, not to sinusoidal stress concentrators. Further, the Gruenbacher stress concentrators do not include, or disclose, a flat area. (See instant invention specification at p. 19; Figs. 2A and 2B).

The stress concentrator of figure 1 in Gruenbacher is not substantially chevron in shape. In fact, the stress concentrator of figure 1 in Gruenbacher is described in the specification as shaped like a V. Chevrons are characterized by relatively smooth curving transitions from the tip to the side members, as illustrated in figure 9 of the current application. The chevron shape provides particular benefits when incorporated in a frangible seal that is intended to cleanly peel apart in a controlled fashion.

The stress riser 17 of Gruenbacher is solely the V-portion of the frangible seal labeled as element 17. In order for the stress riser 17 to comprise a flat area the flat area must be characterized by reduced strength or some other characteristic that increases the internal pressure exerted on the frangible seal at the location of the flat stress riser. Gruenbacher does not make such disclosure.

Since the compartments of Brown do not rupture into one another, or into an expandable chamber, it is not surprising that the Brown reference makes no teaching concerning controlled

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rupture or the use of stress risers to control rupture pressures. Brown, in fact, teaches directly away from any such necessity or desirability.

In Brown, the frangible seals 26 are designed to rupture at any point of their circumference, and empty into a "groove" 23 or "recesses" 28, from which the fluid may make its way to the applicator 11 area. Any point of rupture on the circumference of the seal 26 is equally effective. Further, since the fluid is not dispensed into a chamber that is open to an applicator pad (Note in Brown that it is necessary to open a "weakened portion" 12 before a fluid is admitted to the applicator 11), there is neither teaching nor motivation to create any type of directional or pressure-controlled rupture of the frangible seals.

Further, in light of the arguments with respect to Brown, the subject matter as a whole would not have been obvious at the time the invention was made to a person having ordinary skill in the art.

2. Regarding Claims 5 and 32, the Office Action asserts, "although Brown and Gruenbacher remain silent as to the maximum orthogonal distance between the rear inflection points and the frangible seal second edges, it would have been obvious to modify the modified Brown reference so that the maximum orthogonal distance from the rear inflection points to the frangible seal second edge is in the range of less than a maximum orthogonal distance between the frangible seal first edges and the frangible seal second edges...."

As discussed above, since Brown contains neither teaching nor motivation to use any type of stress riser or controlled rupture features whatsoever, it is therefore logical and necessary

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that there is neither teaching nor motivation to impose any limitations as to the relative dimensions of any such stress riser relative to other structures.

3. Regarding Claims 9, 19, and 36, the Office Action asserts, "...the Gruenbacher reference discloses an apparatus as discussed supra whose sheet is flexible (see col. 7, lines 55-56), but does not disclose that the sheet is a laminated foil....It would have been obvious to use a laminated foil for the sheet of the Brown apparatus in view of Gruenbacher for its good barrier properties."

In light of the arguments with respect to Brown, the subject matter as a whole would not have been obvious at the time the invention was made to a person having ordinary skill in the art.

4. Regarding Claims 14 and 27, the Office Action asserts, "the Brown reference...does not disclose that the first and second sheets are a single sheet interconnected at a fold line. However the Gruenbacher reference teaches a similar apparatus whose first and second sheets are a single sheet interconnected at a fold line....It would have been obvious to modify the Brown apparatus so that its first and [second] sheets are a single sheet interconnected at a fold line in view of Gruenbacher for reduction in the number of parts...."

The disclosure of Gruenbacher et al. cited by the Examiner states:

As best shown in FIGS. 1 and 2, dosing reservoir 10 is made from a flexible film 25 sealed around the perimeter by permeable membrane 15. In a non-limiting example, cell 12 can be formed from a single material

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partially or completely folded onto itself. The folded material is then heat sealed on at least three sides.
(col. 3, lines 35-40)

When the first sheet section and the second sheet section of the present invention are formed of a single sheet, as claimed in claims 14 and 27, the compartment and the chamber are by default formed of the single sheet. Such is not the case in Gruenbacher. Gruenbacher's disclosure regarding a "single material" is directed toward the cell labeled element 12 in figures 1 and 2. Gruenbacher's second cell, labeled element 18, is the cell where the contents of the primary cell 12 are released when the primary cell 12 is ruptured. Gruenbacher does not suggest constructing both the primary cell 12 and the second cell 18 from a single sheet.

Further in light of the arguments with respect to Brown, the subject matter as a whole would not have been obvious at the time the invention was made to a person having ordinary skill in the art.

5. Regarding Claims 8 and 35, the Office Action asserts that the Brown reference "...does not disclose that the applicator is a foam pad. However the Smith reference discloses a similar apparatus wherein the applicator is optionally a foam pad....It would have been obvious to employ a foam pad as the applicator of the Brown apparatus in view of Smith...."

The foam applicator 20, 22 of Smith is completely non-analogous to that of the instant invention. In Smith, the foam applicator 20, 22 contains active agent (Col. 8, lines 21-23); that is, the applicator is not kept free of agent until the time of dispensing.

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In the instant invention, the foam pad 100 is designed to be kept free of agent until the rupture of the frangible seal 220 that admits agent to the expansive chamber 170. Then, the agent is dispensed through the foam pad, wherein it must be dispersed. Accordingly, an entirely different set of mechanical properties is required, in contrast to a pad that is merely saturated with agent during manufacture, and there is neither teaching nor motivation to impose any such limitation in Smith.

In light of the arguments with respect to Brown, the subject matter as a whole would not have been obvious at the time the invention was made to a person having ordinary skill in the art.

6. Regarding Claims 11, 21, and 25, the Office Action asserts, "the Brown reference...does not disclose an applicator cover/end cap which reliably encloses the applicator and allows transmission [of] the substances to a dispensing point when removed. However, the Smith reference discloses a similar apparatus including an applicator cover/end cap...It would have been obvious to employ an applicator cover/end cap...."

The cover sheet 12 of Smith is completely non-analogous art to that of the instant invention. In Smith, the cover sheet 12 is an impervious barrier designed to provide "a moisture or gas barrier, protection of the contents from photochemical change from exposure to light, prevention of plasticizers and stabilizers from the film by the contents of the package, and other like factors." (Col. 7, lines 10-13). As detailed above, in the instant invention, there is no agent in the pad prior to disposing, rendering irrelevant any need to protect the contents (agent) from photochemical change, or any of the other bases for the provision of a cover by Smith.

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In light of the arguments with respect to Brown, the subject matter as a whole would not have been obvious at the time the invention was made to a person having ordinary skill in the art.

IV. Conclusion

In light of the amendments to the specification, claims, drawings, and these remarks, it is believed that each and every rejection raised by the Examiner has been overcome. It is the Applicant's position that the claims are in a condition for allowance. Allowance of the claims is respectfully solicited.

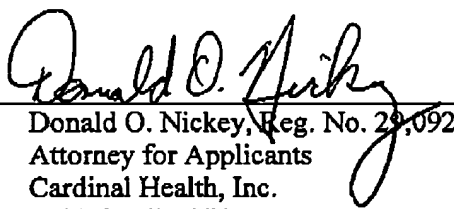
Should the Examiner have any questions or concerns prior to passing this case onto allowance, he is invited to contact the Applicants' undersigned representative.

Respectfully submitted,

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